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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,473	06/05/2001	Anatol y Nikolaevich Paderov	PADEROV ET A	5542

7590 12/09/2003

Collard & Roe
1077 Northern Boulevard
Roslyn, NY 11576

EXAMINER	
PADGETT, MARIANNE L	
ART UNIT	**PAPER NUMBER**
1762	

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/700,473	Applicant(s) Paderov et al
	Examiner M.L. Padgett	Group Art Unit 1762

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to communication(s) filed on 9/25/03.

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 16-30 is/are pending in the application.

Of the above claim(s) _____ is/are withdrawn from consideration.

☒ Claim(s) 28 + 30 is/are allowed.

☒ Claim(s) 16-27 + 29 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Action Summary

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/25/03 has been entered.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 16, 18-21, 23-24, 26-27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kerber (Re. 34,173), in view of Suzuki et al (4,683,149) and Dearnaley (4,629,631) as discussed in paper #8 (mailed 9/27/02) and #11 (mailed 3/27/03), and further in view of North (6,326,582 B1)

It is noted, that with respect to the new limitation in claim 16, requiring the implantation to be simultaneous with the deposition, that Suzuki et al teach the alternatives of alternating deposit & implantation (Fig. 1-3, production examples 1-3) or doing them simultaneously (Fig. 4, examples 1-2 on Col. 6-7), where like materials may be used or treated in either case, and with equivalent results for

mixing, adhesion, etc., providing parameters are adjusted for stopping power of deposited materials presence or absence, as appropriate. Therefore, the amendment to the claims is already covered by the art of the rejection, and the simultaneous option would have been obvious to apply due to its taught benefits of mixing layer formation with the increased tensile strength achieved thereby.

Claim 16 has also been amended to refer to use in repairing parts, in the preamble of the claims. While the claim language does not necessitate that the "machine component or article" be part or parts that are being repaired, the intent is implied. North is supplied to show that coating procedures that produce wear and/or corrosion resistant surfaces on articles, inclusive of turbine and rotors thereof, using conventional coating techniques, are known to be useful and desired for supplying either new or repair protective coatings. See the abstract; Col. 1, lines 11-17; Col.4, lines 22-27+; and Col. 7, lines 35-62, esp. 36-38, 55 and 60. Given such teachings, it would have been obvious to one of ordinary skill in the art that the techniques of the above combination would have been equally suitable and desirable for replacing worn coating on turbine, as like purposes and articles are involved, with the need to repair parts a known desire.

4. Claims 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kerber in view of Suzuki et al and Dearnaley, plus North as applied to claims 16, 18-21, 23-24, 26-27 and 29 above, and further in view of Engel (3,915,757), as applied in section 11 of paper #8.

5. Claim17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kerber in view of Suzuki et al and Dearnaley, plus North as applied to claims 16, 18-21, 23-24, 26-27 and 29 above, and further in view of Kazakou (Ru 2113971), as applied in section 10 of paper #11 mailed 3/27/03.

6. Applicant's arguments with respect to claims 16-27 and 29 have been considered but are moot in view of the new ground(s) of rejection.

7. Claims 28 and 30 have been sufficiently amended such that the resultant structure and composition of the composite coating does not read on the prior art of record.

Of interest to the state of the art for wear resistant coatings, Uchiyama (4,943,486) teaches multi-layer coatings that may include 3 layers of materials as claimed, e.g. Cr/mixed layer/CrNC, but while general individual range thicknesses are within those claimed, as shown by table 3B the mixing layer is always the thinnest, hence the relative proportions differ. Also Uchiyama lacks ion implanting, which would, provide addition interfacial adhesive effects and structure. The Patents to Tanaka et al (5,656,383) and Omura (JP63-166957A) provide further multilayer coatings of claimed materials and use, but differing structure.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication should be directed to M L. Padgett at telephone number 703-308-2336 or after mid December (571) 272-1425, on M-F from about 8:30am – 4:30pm; Fax # (703) 872-9306 (all official)

M. Padgett/lap

December 1, 2003

December 5, 2003

MARIANNE PADGETT
PRIMARY EXAMINER